

What is claimed is:

1. A method of communicating with at least one medication administering device, the method comprising:
  - 5 providing a storage location in at least one medication administering device for storing data in a machine readable format;
  - providing a wireless interface for communicating wirelessly with a remote device; and
    - 10 sending information wirelessly from the remote device to the at least one medication administering device, wherein the information is sent using an extensible markup language.
  2. The method of claim 1, wherein the information includes entries for a drug library.
  3. The method of claim 1, wherein the information includes medication administering device parameters.
  4. The method of claim 1, further comprising providing a plurality of medication
   - 15 administering devices to constitute the at least one medication administering device.
  - 5. The method of claim 1, wherein providing a wireless interface includes providing at least one antenna.
  - 6. The method of claim 5, further comprising enclosing the at least one antenna within a wireless interface case.
  - 20 7. The method of claim 5, further comprising enclosing the at least one antenna and the storage location within a housing of the medication administering device.
  - 8. The method of claim 1, wherein providing a wireless interface includes providing two antennas.
  - 9. The method of claim 8, wherein the two antennas are spatially diverse.
  - 25 10. The method of claim 8, wherein the two antennas are positioned orthogonally to achieve pattern diversity.
  - 11. The method of claim 8, wherein the two antennas are positioned orthogonally and are spatially diverse to achieve both pattern diversity and spatial diversity.
  - 12. The method of claim 1, further comprising receiving information from the medication
   - 30 administering device.
  - 13. The method of claim 12, wherein the information received from the medication administering device includes event logs.

14. The method of claim 1, wherein the medication administering device is an infusion pump.

16. The method of claim 1, wherein the medication administering device is a patient-controlled analgesia pump.

5 17. The method of claim 1, wherein the medication administering device is an ambulatory pump.

18. An apparatus for administering one or more prescribed medications to a patient, the apparatus comprising:

a controller for controlling the operation of the apparatus;

10 one or more storage locations electrically coupled to the controller for storing device parameters for the apparatus in a machine readable format; and

a wireless interface electrically coupled to the controller for communicating wirelessly with an external device.

19. The apparatus of claim 18, wherein the apparatus is an infusion pump.

15 20. The apparatus of claim 18, wherein the one or more storage locations store a drug library.

21. The apparatus of claim 18, wherein communications between the wireless interface and the external device use an extensible markup language.

20 22. The apparatus of claim 18, further comprising an antenna coupled to the wireless interface.

23. The apparatus of claim 22, further comprising a housing enclosing the controller, the one or more storage locations, the wireless interface, and the antenna.

24. The apparatus of claim 22, further comprising first and second antennas coupled to the wireless interface.

25 25. The apparatus of claim 24, wherein the first and second antennas are spatially diverse.

26. The apparatus of claim 24, wherein the first and second antennas are positioned orthogonally to achieve pattern diversity.

27. The apparatus of claim 24, wherein the first and second antennas are positioned orthogonally and are spatially diverse to achieve both pattern diversity and spatial diversity.

30 28. The apparatus of claim 27, further comprising a housing enclosing the controller, the one or more storage locations, the wireless interface, and the first and second antennas.

29. A method of administering medication to one or more patients, the method comprising:  
providing a plurality of medication administering devices each having a controller for  
controlling the operation of the device, one or more storage locations for storing  
5 information relating to the operation of the device, and a wireless interface;  
providing a host computer;  
configuring a drug library on the host computer; and  
sending information from the drug library on the host computer to at least some of the  
medication administering devices over the wireless interface.

10 30. The method of claim 29, wherein the information is sent in a point to point manner to only one of the medication administration devices.

31. The method of claim 29, wherein the information is broadcast to all of the medication administration devices simultaneously.

15 32. The method of claim 29, further comprising administering drugs to a patient based at least partially on the information received from the host computer.

33. The method of claim 29, wherein the information is sent to the medication administering device using an extensible markup language.

34. The method of claim 29, further comprising enclosing the at least one antenna within a housing.

20 35. The method of claim 34, wherein the housing also encloses the controller and the one or more storage locations of the medication administering device.

36. The method of claim 29, further comprising providing two antennas for the wireless interface of the medication administering device.

37. The method of claim 36, wherein the two antennas are spatially diverse.

25 38. The method of claim 36, wherein the two antennas are positioned orthogonally to achieve pattern diversity.

39. The method of claim 36, wherein the two antennas are positioned orthogonally and are spatially diverse to achieve both pattern diversity and spatial diversity.

30 40. The method of claim 29, wherein the medication administering device is an infusion pump.

41. The method of claim 29, wherein the medication administering device is a patient controlled analgesia pump.

42. The method of claim 29, wherein the medication administering device is an ambulatory pump.

43. The method of claim 29, further comprising sending information from the medication administering device to the host computer.

5 44. The method of claim 43, wherein the information is sent from the medication administering device to the host computer using an extensible markup language.

45. The method of claim 44, wherein the information received by the host computer includes event logs.

10 46. The method of claim 44, further comprising generating one or more reports from the information sent by the medication administering device.

47. The method of claim 46, wherein the one or more reports include information from event logs.

48. The method of claim 46, wherein the one or more reports include information relating to the operation of the medication administering device.

15 49. The method of claim 29, wherein the step of sending information from the drug library includes providing a hard limit for a medication.

50. The method of claim 29, wherein the step of sending information from the drug library includes providing a soft limit for a medication.

20 51. The method of claim 29, wherein the step of sending information from the drug library includes providing both a hard limit and a soft limit for a medication.

52. A method of communicating with one or more medication administering devices, the method comprising:

providing a host computer;

providing one or more medication administering devices;

25 formatting a message using an extensible markup language (XML); and

sending the XML formatted message from the host computer to at least one of the one or more medication administering devices.

53. The method of claim 52, further comprising sending an XML formatted message from one of the one or more medication administering devices to the host computer.

30 54. The method of claim 52, further comprising parsing the received XML formatted message to obtain information sent by the host computer.

55. The method of claim 52, wherein the XML formatted message is sent wirelessly.

56. The method of claim 52, wherein formatting a message further comprises:  
using one or more XML identifiers to format the message; and  
abbreviating one or more XML identifiers to reduce the bandwidth required to send the XML  
formatted message.

5 57. The method of claim 52, further comprising storing a drug library on the host  
computer.

58. The method of claim 57, wherein the XML formatted message includes information  
from the stored drug library.

10 59. The method of claim 52, wherein the one or more medication administering devices  
are infusion pumps.

60. The method of claim 52, wherein the message is in a canonical form.

70. The method of claim 52, further comprising validating information contained in the  
message.

71. The method of claim 70, wherein the information is validated using an XML schema.

15 72. The method of claim 70, wherein the step of validating information further comprises  
the steps of comparing a canonical representation of the information from the host computer  
with a canonical representation of the information from the at least one of the one or more  
medication administering device that received the message.

20 73. The method of claim 72, wherein the information validated comprises a plurality of  
bits, and wherein the canonical representations are generated using a bit order from right to  
left.

74. The method of claim 52, further comprising validating data that is stored by the host  
computer and by a medication administering device.

25 75. The method of claim 74, wherein the step of validating data further comprises the  
steps of comparing a canonical representation of the data stored by the host computer with a  
canonical representation of the data stored by the medication administering device.

76. A method of administering medication to one or more patients, the method  
comprising:

providing a host computer;

30 using the host computer to store drug delivery information to configure a drug library;

using an extensible markup language (XML) to generate messages containing data relating to  
the stored drug delivery information;

sending the generated messages to a medication administering device;  
parsing the sent messages at the medication administering device to extract the data from the  
stored drug delivery information; and  
using the medication administering device to administer medication to a patient based at least  
5 partially on the extracted data.

77. The method of claim 76, wherein the medication administering device is an infusion pump.

78. The method of claim 76, wherein messages are sent to the medication administering device wirelessly.

10 79. The method of claim 76, further comprising using an extensible markup language (XML) to generate messages at the medication administering device.

80. The method of claim 79, further comprising sending the messages from the medication administering device to the host computer.

81. The method of claim 76, wherein the medication administering device includes one or  
15 more pumps for administering medication to a patient, the method further comprising controlling the operation of the one or more pumps based at least partially on the extracted data.

82. The method of claim 76, wherein the drug delivery information includes one or more drug libraries.

20 83. A method of downloading a drug library to a plurality of medication administering devices, the method comprising:

providing a plurality of medication administering devices;

providing a host computer;

storing a drug library in the host computer;

25 using an extensible markup language (XML) to provide communication between the host computer and the plurality of medication administering devices; and

sending information relating to the stored drug library from the host computer to the plurality of medication administering devices.

84. The method of claim 83, wherein the information sent to the plurality of medication  
30 administering devices is tagged.

85. The method of claim 84, wherein each medication administering device uses the tags to selectively utilize portions of the information.

86. The method of claim 84, wherein each medication administering device uses the tags to parse the information to selectively utilize portions of the information.

87. The method of claim 84, wherein the sent information includes the entire drug library.

88. The method of claim 84, wherein the sent information includes only a subset of the drug library.

89. The method of claim 83, wherein the drug library is simultaneously downloaded to the plurality of medication administering devices.

90. The method of claim 89, wherein messages sent to the plurality of medication administering devices while the drug library is downloaded are tagged.

91. The method of claim 90, further comprising halting the drug library download when one of the medication administering devices reports a download error, and later continuing the drug library download.

92. The method of claim 91, wherein the drug library download is continued without downloading at least some of the tagged messages a second time.

93. The method of claim 92, wherein the drug library download is continued from a point where no medication administering devices had reported a download error.

94. The method of claim 93, wherein the medication administering devices are infusion pumps.

95. A method of communicating with a plurality of different types of medication administering devices, the method comprising:

providing a host computer;

providing a first type of medication administering device;

providing a second type of medication administering device;

storing data on the host computer, the data relating to the operation of a plurality of

medication administering devices; and

communicating with the medication administering devices, wherein communication between the host computer and the medication administering devices uses messages formatted using an extensible markup language (XML).

96. The method of claim 95, wherein the first type of medication administering device uses a computer architecture that is different from the computer architecture used by second type of medication administering device.

97. The method of claim 95, wherein the first type of medication administering device uses a first type of computer processor and the second type of medication administering device uses a second type of computer processor.

98. The method of claim 95, wherein the first type of medication administering device runs software that is different from software run on the second type of medication administering device.

99. The method of claim 95, wherein the first type of medication administering device uses a binary data format that is incompatible with a binary format used by the second type of medication administering device.

100. The method of claim 95, wherein the messages used when communication between the host computer and the medication administering devices are converted to a canonical form.

101. The method of claim 95, wherein the communication between the host computer and the medication administering devices is wireless.

102. The method of claim 95, wherein storing data on the host computer further comprises storing a drug library on the host computer.

103. The method of claim 102, wherein the same stored drug library is downloaded to multiple medication administering devices.

104. The method of claim 102, wherein the same stored drug library is downloaded to multiple medication administering devices, at least some of which are different types of medication administering devices.

105. The method of claim 102, wherein at least a portion of the stored drug library is downloaded to multiple medication administering devices.

106. A method of controlling a medication administering device, the method comprising: providing a medication administering device having a controller for controlling the operation of the device and one or more storage locations for storing information relating to the operation of the device;

storing a first set of limits defining an first upper value and a first lower value of a parameter of a first drug; and

storing a second set of limits defining an second upper value and a second lower value of the parameter of the first drug.



107. The method of claim 106, wherein, when the medication administering device is being used to administer a drug, comparing the first and second sets of limits of the parameter with the actual value of the parameter.

108. The method of claim 107, further comprising displaying a warning when the value of parameter is not within the first or second limits.

109. The method of claim 107, wherein the first set of limits fall within the range of the second set of limits.

110. The method of claim 108, wherein, if the value of the parameter is outside of the range of the second limits, the medication administering device is not allowed to administer the given drug.

111. The method of claim 110, wherein the second set of limits can be overridden by an authorized person.

112. The method of claim 111, further comprising tracking the number of times the second set of limits are overridden.

113. The method of claim 112, further comprising generating a report containing information relating to the second set of limits and the tracked information.

114. The method of claim 107, wherein, if the value of the parameter is outside of the range of the first limits, and the value of the parameter is within the range of the second limits, the medication administering device is not allowed to administer the given drug.

115. The method of claim 114, wherein the first second set of limits can be overridden by an authorized person.

116. The method of claim 115, further comprising tracking the number of times the second set of limits are overridden.

117. The method of claim 115, further comprising generating a report containing information relating to the second set of limits and the tracked information.

118. The method of claim 106, wherein the first set of limits are soft limits and the second set of limits are hard limits.

119. The method of claim 118, wherein each drug can have different hard and soft limits for different clinical care areas in a hospital.

120. The method of claim 106, wherein the parameter of the drug relates to a dosage rates.

121. The method of claim 106, wherein the parameter of the drug relates to a dose.

122. The method of claim 106, wherein the parameter of the drug relates to a dosage.

123. The method of claim 106, wherein the parameter of the drug relates to a drug amount.

124. The method of claim 106, wherein the parameter of the drug relates to a diluent amount.

5 125. The method of claim 106, wherein the parameter of the drug relates to a rate of administration.

126. The method of claim 106, wherein the parameter of the drug relates to drug delivery time.

127. The method of claim 106, wherein the parameter of the drug relates to drug concentration.

10 128. The method of claim 106, wherein the parameter of the drug relates to the weight of a patient.

129. The method of claim 106, wherein the parameter of the drug relates to the body surface area of a patient.

15 130. The method of claim 106, wherein the medication administering device is an infusion pump.

131. The method of claim 106, wherein the parameter of the drug relates to the volume to be infused (VTBI).

132. An apparatus for administering one or more medications to a patient, the apparatus comprising:

20 a controller;

one or more storage locations electrically coupled to the controller;

control information stored in the one or more storage locations for controlling the operation of the apparatus, wherein the control information includes a set of soft limits defining a first range of values of an operating parameter and a set of hard limits defining a  
25 second range of values for the operating parameter.

133. The apparatus of claim 132, wherein the set of soft limits falls within the range of the hard limits.

134. The apparatus of claim 132, wherein the controller compares the value of the operating parameter to the hard and soft limits.

30 135. The apparatus of claim 132, wherein the controller displays a message when the value of operating parameter is not within the hard and soft limits.

136. The apparatus of claim 132, wherein the controller prevents a user from administering medications to a patient when the operating parameter falls outside the range of the hard limits.

137. The apparatus of claim 136, wherein the hard limits can be overridden by an authorized person.

138. The apparatus of claim 137, wherein the number of times a hard limit is overridden is tracked by the controller.

139. The apparatus of claim 138, wherein a report is generated containing information relating to the hard limits and the tracked information.

140. The apparatus of claim 135, wherein the controller displays a message when the value of the operating parameter is within the range of the hard limits, but is outside the range of the soft limits.

141. The apparatus of claim 135, wherein the controller requires a user to confirm the overriding of a soft limit when the value of the operating parameter is within the range of the hard limits, but is outside the range of the soft limits.

142. The apparatus of claim 141, wherein the controller tracks the number of times a soft limit is overridden.

143. The apparatus of claim 142, further comprising generating a report containing information relating to the soft limits and the tracked information.

144. The apparatus of claim 132, wherein the operating parameter relates to drug dosage rates.

145. The apparatus of claim 132, wherein the operating parameter relates to drug delivery time.

146. The apparatus of claim 132, wherein the operating parameter relates to drug concentration.

147. The apparatus of claim 132, wherein the operating parameter relates to the weight of a patient.

148. The apparatus of claim 132, wherein the operating parameter relates to the volume of a drug to be infused.

149. The apparatus of claim 132, wherein the apparatus is an infusion pump.

150. A method of controlling a medication administering device, the method comprising:

providing a medication administering device having a controller for controlling the operation of the device and one or more storage locations for storing information relating to the operation of the device;

providing the capability of storing a first set of limits defining an first upper value and a first lower value of a parameter of a first drug; and  
 providing the capability of storing a second set of limits defining an second upper value and a second lower value of the parameter of the first drug.

151. The method of claim 150, further comprising selectively storing values in one or more of the first and second sets of limits.

152. The method of claim 150, further comprising creating hard and soft upper and lower limits by storing first and second sets of upper and lower limits.

153. The method of claim 150, further comprising creating only hard and soft upper limits by storing first and second sets of upper limits.

154. The method of claim 150, further comprising creating only hard and soft lower limits by storing first and second sets of lower limits.

155. The method of claim 150, further comprising selectively creating a combination of a hard upper limit, a hard lower limit, a soft upper limit, and/or a soft lower limit.

156. The method of claim 150, further comprising creating a set of limits using a combination of one or more of the following limits: a hard upper limit, a hard lower limit, a soft upper limit, a soft lower limit.

157. A method of configuring a drug library for use by a medication administering device, the method comprising:

providing a host computer;

providing a user customizable worksheet of medical device parameters, wherein the user

customizable worksheet allows a user to set up hard and soft limits;

configuring the worksheet; and

downloading the worksheet to one or more medication administering devices.

158. The method of claim 157, wherein the customizable worksheet is selected from a plurality of worksheets.

159. The method of claim 157, wherein the medical device parameters include a drug library.

160. The method of claim 157, wherein the worksheet can be configured based on a selected clinical care area.

161. The method of claim 157, wherein configuring the worksheet includes setting up the hard and soft limits.

5 162. The method of claim 157, wherein the user customizable worksheet allows a user to set up hard and soft limits.

163. The method of claim 157, further comprising entering data into the worksheet.

164. The method of claim 163, wherein data entered by a user is validated in real time.

165. The method of claim 164, wherein data is validated using constraint objects, which  
10 define an implementation for validating data inputs.

166. The method of claim 157, wherein a drug library is exported from the host computer to a second computer.

167. The method of claim 166, wherein the drug library is exported using a binary format.

168. The method of claim 157, wherein a drug library is imported to the host computer  
15 from a second computer.

169. The method of claim 157, further comprising displaying at least a portion of the worksheet during the configuration of the worksheet.

170. The method of claim 157, further comprising displaying a reference worksheet on the same screen as the worksheet under configuration.

20 171. The method of claim 157, wherein configuring the worksheet includes editing a drug formulary.

172. The method of claim 171, further comprising providing a split screen display showing the drug formulary being edited, while also displaying a reference formulary.

173. The method of claim 157, wherein configuring the worksheet includes defining a set  
25 of rules governing individual drugs in the drug library.

174. The method of claim 173, wherein the set of rules include rules relating to drug concentrations and dosages.

175. The method of claim 173, wherein the set of rules include rules that define drug delivery limits.

30 176. The method of claim 173, wherein the set of rules include medication administering device level rules.

177. The method of claim 176, wherein the device level rules relate to capabilities or limitations of certain medication administering devices.

178. The method of claim 173, wherein the set of rules include clinical care area level rules, specific to certain clinical care areas.

5 179. The method of claim 173, wherein the set of rules include patient level rules, specific to certain patients.

180. A method of configuring a drug library for use by a medication administering device, the method comprising:

providing a host computer;

10 providing a user customizable worksheet of medical device parameters;

configuring the worksheet by entering data into the worksheet;

validating the entered data in real time; and

downloading the worksheet to one or more medication administering devices.

15 181. The method of claim 180, wherein the customizable worksheet is selected from a plurality of worksheets.

182. The method of claim 180, wherein the medical device parameters include a drug library.

183. The method of claim 180, wherein the worksheet can be configured based on a selected clinical care area.

20 184. The method of claim 180, wherein the user customizable worksheet allows a user to set up hard and soft limits.

185. The method of claim 180, wherein data is validated using constraint objects, which define an implementation for validating data inputs.

25 186. The method of claim 180, wherein a drug library is exported from the host computer to a second computer.

187. The method of claim 186, wherein the drug library is exported using a binary format.

188. The method of claim 180, wherein a drug library is imported to the host computer from a second computer.

30 189. The method of claim 180, further comprising displaying at least a portion of the worksheet during the configuration of the worksheet.

190. The method of claim 189, further comprising displaying a reference worksheet on the same screen as the worksheet under configuration.

191. The method of claim 180, wherein configuring the worksheet includes editing a drug formulary.

192. The method of claim 191, further comprising providing a split screen display showing the drug formulary being edited, while also displaying a reference formulary.

5 193. The method of claim 180, wherein configuring the worksheet includes defining a set of rules governing individual drugs in the drug library.

194. The method of claim 193, wherein the set of rules include rules relating to drug concentrations and dosages.

10 195. The method of claim 193, wherein the set of rules include rules that define drug delivery limits.

196. The method of claim 193, wherein the set of rules include medication administering device level rules.

197. The method of claim 196, wherein the device level rules relate to capabilities or limitations of certain medication administering devices.

15 198. The method of claim 193, wherein the set of rules include clinical care area level rules, specific to certain clinical care areas.

199. The method of claim 193, wherein the set of rules include patient level rules, specific to certain patients.

20 200. A method of configuring a drug library for use by a medication administering device, the method comprising:

providing a host computer;

providing a user customizable worksheet of medical device parameters;

configuring the worksheet;

displaying at least a portion of the worksheet during the configuration of the worksheet;

25 displaying a reference worksheet on the same screen as the worksheet under configuration;  
and

downloading the worksheet to one or more medication administering devices.

201. The method of claim 200, wherein the customizable worksheet is selected from a plurality of worksheets.

30 202. The method of claim 200, wherein the medical device parameters include a drug library.

203. The method of claim 200, wherein the worksheet can be configured based on a selected clinical care area.

204. The method of claim 200, wherein the user customizable worksheet allows a user to set up hard and soft limits.

5 205. The method of claim 200, further comprising entering data into the worksheet.

206. The method of claim 205, wherein data entered by a user is validated in real time.

207. The method of claim 206, wherein data is validated using constraint objects, which define an implementation for validating data inputs.

10 207. The method of claim 200, wherein a drug library is exported from the host computer to a second computer.

208. The method of claim 207, wherein the drug library is exported using a binary format.

209. The method of claim 200, wherein a drug library is imported to the host computer from a second computer.

15 210. The method of claim 200, wherein configuring the worksheet includes editing a drug formulary.

211. The method of claim 210, further comprising providing a split screen display showing the drug formulary being edited, while also displaying a reference formulary.

212. The method of claim 200, wherein configuring the worksheet includes defining a set of rules governing individual drugs in the drug library.

20 213. The method of claim 212, wherein the set of rules include rules relating to drug concentrations and dosages.

214. The method of claim 212, wherein the set of rules include rules that define drug delivery limits.

25 215. The method of claim 212, wherein the set of rules include medication administering device level rules.

216. The method of claim 215, wherein the device level rules relate to capabilities or limitations of certain medication administering devices.

217. The method of claim 212, wherein the set of rules include clinical care area level rules, specific to certain clinical care areas.

30 218. The method of claim 212, wherein the set of rules include patient level rules, specific to certain patients.



219. A method of administering medication to one or more patients, the method comprising:

providing a host computer;

providing a plurality of medication administering devices, each device having a controller for

5 controlling the operation of the device and one or more storage locations for storing information relating to the operation of the device;

providing a communication link between the host computer and the plurality of medication administering devices;

exchanging information between the host computer and medication administering devices;

10 and

generating one or more reports relating to the operation of the plurality of medication administering devices.

220. The method of claim 219, wherein the plurality of medication administering devices send event logs to the host computer, and wherein the one or more generated reports includes  
15 event log information from at least one of the medication administering devices.

221. The method of claim 220, wherein the generated reports includes statistical data relating to event logs from a plurality of medication administering devices.

222. The method of claim 220, wherein the plurality of medication administering devices log override data relating to user overrides of device parameter limits.

20 223. The method of claim 222, wherein the plurality of medication administering devices send the override data logs to the host computer, and wherein a report is generated based on the override data logs.

224. The method of claim 223, wherein the generated report indicates the number of times users have overridden device parameter limits.

25 225. The method of claim 223, wherein the generated report indicates the number of times users have declined to override a device parameter limit.

226. The method of claim 219, wherein the one or more reports include information relating to the operation of one or more of the medication administering devices.

30 227. The method of claim 219, further comprising storing exchanged information from the plurality of medication administering devices to build a database of device information.

228. The method of claim 227, further comprising generating a report including statistics relating to the drugs administered by a given set of medication administering devices.

229. The method of claim 219, wherein the communication link is a wired network.

230. The method of claim 219, wherein the communication link is a wireless network.

231. The method of claim 219, wherein the host computer and plurality of medication administering devices format messages using an extensible markup language (XML).

5 232. The method of claim 219, wherein the medication administering devices are infusion pumps.

233. A medical device system, comprising:

a host computer having a memory for storing medical device parameters;

an electrical connection formed between the host computer and a medical device for

10 transferring data therebetween;

a user customizable worksheet of medical device parameters on computer readable medium

for import into the memory of the host computer and download to the medical device;

234. A medical device system according to claim 233, further comprising a housing for housing the medical device, wherein the electrical connection between the host computer and

15 the medical device includes a plug and play module disposed in a slot within the housing.

235. A medical device system according to claim 233, wherein the medical device has a housing with a slot formed therein for receiving the plug and play module and a plug inside the housing for receiving the plug and play module.

236. A medical device system according to claim 233, further comprising a housing for housing the medical device, wherein the electrical connection between the host computer and the medical device includes a connectivity engine fully enclosed within the housing such that the electrical connection between the host computer and the medical device is wireless.

237. A medical device system according to claim 233, wherein the electrical connection between the host computer includes data cables.

25 238. A medical device system according to claim 233, wherein the user customizable worksheet allows a user to establish hard limits and soft limits.

239. A medical device system according to claim 233, wherein the electrical connection between the host computer and the medical device is wireless.

30 240. A medical device system according to claim 239, further comprising two antennas for communicating with the host computer.

241. A computer readable medium storing a program that runs on a computer including a storage medium for storing medical device information, the medical device information

including a worksheet containing device parameters for configuring a programmable medical device with said device parameters based on a selected clinical care area, said program for causing the computer to perform the functions of:

enabling a user of said computer to select a worksheet;

- 5 enabling the user to customize the worksheet with both hard and soft limits to meet user

developed device parameters based on a selected clinical area;

enabling the user to electronically download a portion of the worksheet to the medical device.

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